

## REMARKS

Applicants have amended claims 9 and 12. Thus, Claims 9-12 are pending in the subject application. Applicants respectfully submit that the present response places the present application in condition for allowance or in better condition for purposes of appeal.

### Claim Rejections - 35 U.S.C. 103

The Examiner has rejected claims 9-12 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,980,513 (Novick) in view of U.S. Patent No. 6,721,273 (Lyon) and further in view of U.S. Patent No. 7,042,883 (Fan).

As Applicants have already argued in the amendment filed on July 10, 2007, Applicants respectfully disagree with the Examiner's reading of the Novick reference onto Applicant's claim 9, limitation (b). Referring to the present Final Office Action, page 2, the Examiner states that Novick discloses "... a queue scheduler (**scheduler 34** in Figure 1) for reading ... a data packet ... determined by a normal priority preemption algorithm (**best effort for low priority multiplexer 12**)" and "... (b) receiving from a credit device (**MCR list 36 in Figure 1, column 3, lines 36-37**) ... at each packet cycle a value N (MCRR 16a, 18a, 20a and 22a in Figure 1) defining the priority rank to be considered by **said** queue scheduler ..." (emphasis added). The Examiner identified Novick's low priority scheduler 34 as the "a queue scheduler" so "**said** queue scheduler" also refers to Novick's **low** priority scheduler 34 based on proper antecedent basis for claim structure. However, Applicants believe that the Examiner's characterization of the MCR list 36 of Novick as "the credit device" defining the priority rank to be considered by "**said** queue scheduler 34" (i.e. low priority scheduler 34) is not correct. Novick does not associate MCR list 36 with low priority scheduler 34 as the Examiner alleges, rather, Novick states that high priority scheduler 24 is associated with MCR list 36 and that low priority scheduler 34 is associated with Best Effort list 38. Novick explicitly states in column 3, lines 36-37:

FR920010070US1

“The high priority scheduler 24 is associated with an MCR service list 36 and the low priority scheduler 34 is associated with a Best Effort (BE) service list 38.” (emphasis added).

Thus, Novick is silent on MCR list 36 being associated with low priority scheduler 34 as the Examiner alleges nor does Novick disclose, teach or suggest any one of the queue schedulers 24 or 34 being associated with both the MCR list 36 and the BE service list 38.

The Examiner expressly states that Novick and Lyon “... do not expressly call for: single queue scheduling mechanism.” The Examiner states that Fan teaches a single queue scheduling mechanism and that “... it would have been obvious to add the single scheduling mechanism of Fan in place of the two schedulers of the combination of Novick and Lyon in order to save space in the device by integrating the two schedulers into a single scheduler.” Thus, Applicants believe that the Examiner is asserting that by simply combining the two queue schedulers (24, 34) of Novick into a single queue scheduler to reduce space in a device results in Applicants’ claimed invention.

Applicants respectfully disagree with the Examiner’s assertion that by simply combining the two queue schedulers of Novick to reduce space in a device results in Applicants’ claimed invention. Applicants respectfully submit that the claimed invention is beyond a mere simple combination of individual parts disclosed in Novick. As will be discussed herein below, Applicants’ claimed invention shows insight that was contrary to the understandings and expectations of Novick individually or in combination with Lyon and Fan.

Applicants’ claim 9, as amended, recites “.. **a credit device** that provides at each packet cycle a value N defining a priority rank to be considered by **said single queue scheduler**, the **considered priority rank** is selected based on a pre-determined value related to **all of said**

**plurality of priority ranks which are associated with said single queue scheduling mechanism ..."** (emphasis added).

Referring to FIG. 1 of the present application, Applicants' claimed invention relates to a **single** credit device 28 that is associated with **all** of the priority ranks  $P_0$ ,  $P_1$ ,  $P_2$  and  $P_3$  (i.e. including high and low priority ranks) which are associated with the queue scheduling mechanism 10. Applicants' claimed invention also relates to a **single** queue scheduler 20 that is associated with **all** of the priority ranks  $P_0$ ,  $P_1$ ,  $P_2$  and  $P_3$  (i.e. including high and low priority ranks) which are associated with the queue scheduling mechanism 10. Thus, Applicants' claimed invention relates to a **single** credit device 28 and a **single** queue scheduler 20 which are **each** associated with **all** of the priority ranks  $P_0$ ,  $P_1$ ,  $P_2$  and  $P_3$ , including high and low priority ranks, which are associated with the queue scheduling mechanism 10. At each packet cycle, the single credit device 28 establishes which priority rank among all of the priority ranks  $P_0$ ,  $P_1$ ,  $P_2$  and  $P_3$  to serve. In this way, a minimum service rate for any one of the priority ranks  $P_0$ ,  $P_1$ ,  $P_2$  and  $P_3$  (e.g. lowest priority) is provided by the single credit device 28 even when there are other priority ranks (e.g. highest priority) which need to be served. Applicants' claimed invention provides a queue scheduling mechanism 10 which serves the data packet queue based on **all** of the priority ranks  $P_0$ ,  $P_1$ ,  $P_2$  and  $P_3$  which are associated with the queue scheduling mechanism 10, and does not just serve the highest priority rank  $P_0$  first until it is empty and then moves on to the next priority rank  $P_1$ , etc. as is disclosed by Novick. Applicants' claimed invention avoids congestion with data packets with a specific priority rank (e.g. lowest priority rank data packets) since a minimum service rate is provided by the single credit device 28 for even the lowest priority rank associated with queue scheduling mechanism 10.

Combining the two separate schedulers of Novick into one scheduler to reduce space of the device still does **not** result in Applicants' claimed invention as discussed herein above. Not only does the combination of Novick, Lyon and Fan fail to disclose a single queue scheduler,

Novick, Lyon and Fan also fail to disclose, teach or suggest a **single** credit device that is associated with **all** of the priority ranks (i.e. including high and low priority ranks) which are associated with the queue scheduling mechanism. Applicants respectfully submit that Novick discloses a credit device MCR list 36 which is **not** associated with **all** of the priority ranks associated with the queue scheduling mechanism. MCR list 36 is associated only with the high priority ranks and is not associated with the low priority ranks. Regardless of whether a single queue scheduler or a plurality of queue schedulers is used by Novick, Novick discloses servicing the priority ranks from the MCR list 36 first and then, only after all of the priority ranks from the MCR list 36 have been serviced, servicing the priority ranks from the BE list 38 (see column 4, lines 5 - 51).

Combining Novick's two queue schedulers into one queue scheduler may result in a reduction in space of the device as stated by the Examiner, however, it does not result in Applicants' claimed invention since Novick's single scheduler would still have a credit device (i.e. MCR list 36) which is **not** associated with **all** of the priority ranks associated with the queue scheduling mechanism. Novick's single queue scheduler would not be presented with a priority rank which is "... selected based on a pre-determined value related to all of said plurality of priority ranks which are associated with said single queue scheduling mechanism, wherein said priority ranks comprise high and low priority ranks ..." as claimed by Applicants. Novick's single queue scheduler would still service the priority ranks from the MCR list 36 first and then, only after all of the priority ranks from the MCR list 36 have been serviced, service the priority ranks from the BE list 38. Novick discloses a queue scheduling mechanism which does not provide for a minimum traffic flow for the lowest priority rank data packets since the highest priority rank data packets will always be served first resulting in congestion in the data packet transmission system.

Applicants respectfully submit that it would not be obvious to combine MCR list 36 and

BE list 38 of Novick into a single credit device to reduce space of the credit device since Novick discloses allocating bandwidth among MCR and BE connections by using MCR list 36 to service high priority ranks first and then BE list 38 to service lower priority ranks only after all of the higher priority ranks have been serviced. Thus, Novick provides no disclosure, teaching or suggestion for combining MCR list 36 and BE list 38 into one credit device, nor would combining MCR list 36 and BE list 38 to reduce the space of a single credit device result in Applicants' claimed invention since a single credit device according to Novick would still only provide a priority rank selected from **some, not** all, of the priority ranks which are associated with the queue scheduling mechanism. Thus, a single credit device according to Novick would still not disclose, teach or suggest Applicants' limitation of "... the **considered priority rank** is selected based on a pre-determined value related to **all of said priority ranks** which are **associated with said single queue scheduling mechanism ...**" (emphasis added). Combining MCR list 36 and BE list 38 into a single credit device, as well as combining queue schedulers 24, 34 into a single queue scheduler, according to Novick in view of Lyon and further in view of Fan does not provide a minimum service rate for a specific priority rank (e.g. lowest priority rank) associated with the queue scheduling mechanism as is claimed by Applicants.

Applicants respectfully submit that Novick does not disclose, teach or suggest Applicants' claim 12, as amended. Applicants' claimed invention relates to a **single** queue scheduler 20 that is associated with **all** of the priority ranks  $P_0$ ,  $P_1$ ,  $P_2$  and  $P_3$  (i.e. including highest and lowest priority ranks) which are associated with the **single** queue scheduling mechanism 10. As discussed herein above, Novick's high priority scheduler 24 is associated only with high priority ranks (i.e. MCR list 36) and low priority scheduler 34 is associated only with low priority ranks (i.e. BE service list 38) (see Fig. 1 and column 4, lines 19-51). Thus, Novick discloses some of the priority ranks (e.g. high priority ranks) associated with one queue scheduler and the remaining of the priority ranks (e.g. low priority ranks) associated with another queue scheduler. Novick is silent on all of the priority ranks MCR list 36 and BE service list 38

being associated with a single queue scheduler.

Therefore, Applicants believe that the rejection of the claims under 35 U.S.C. 103(a) has been overcome and it is respectfully requested that the pending claims be passed to issuance in view of the amendments and remarks.

## CONCLUSION

In light of the foregoing amendments and remarks, all of the claims now presented are believed to be in condition for allowance, and Applicants respectfully request that the outstanding objections be withdrawn and this application be passed to issue at an early date.

The Examiner is urged to call the undersigned at the number listed below if, in the Examiner's opinion, such a phone conference would aid in furthering the prosecution of this application. Applicants request a one month extension of time by virtue of the present response. Please charge Applicants' deposit account, 09-0456, a fee of \$120 for a one month extension of time which is due by virtue of this response, and for any additional fee that the PTO determines is due.

Respectfully Submitted,

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